



Math

1. Program or Unit Description

Program or Unit Mission or Purpose Statement

The UHMC Math program teaches students 21st-century mathematics literacy, quantitative as well as qualitative communication skills, and critical thinking/problem solving skills that support personal, civic, professional, and academic pursuits.

For MATH 103 + 88 and MATH 115 + 78, the single learning outcome of the co-req course is to support students who placed just below the threshold for the college-level course, so they can complete the college-level course in one semester.

We have been offering a 5-week model for MATH 115. This class was reserved for the fully online AA degree, with remaining seats open for UHMC non-cohort students.

We have trialed a Learning Community course with Math 115 and English 100 for First Year Students. The FY Learning Community is a cluster of two courses taken in the first year by the same students in the same semester.

This is work towards:

- Teacher collaboration with course content and student interventions.
- Students becoming part of a small community within a larger environment.
- Students create good peer-to-peer connections and friendships across classes.

What is the target student or service population?

UHMC is an open-door institution that serves learners from all walks of life. Like most community colleges, students often enter lacking college-ready math skills. Students from many ethnic, gender, age, and socio-economic backgrounds are served by the Co-Req. Math program. Math Co-Req. supports students who need supplemental academic support to develop college-readiness in mathematics literacy. Courses are designed to include additional learning activities that emphasize scaffolding of course content, collaborative work, and feedback from the instructors.

The corequisite program model shortens the path to transfer level courses.

A few years ago, UHMC began using multiple measures for Math class placement rather than a standardized test, and this placement usage has increased enrollment straight into transfer level Math courses, reducing the number of students placed into corequisite developmental Math classes.

2. Analysis of the Program/Unit

Enrollment Goals

In relation to campus enrollment, demand for the program has remained historically stable. UHMC Math Co-Req. program does see a roughly 10-point improvement in the most recent AY, 2021-2022. This may be correlated to the drop in New Student enrollment likely due to the global pandemic and/or improvements from student counselors in advising. UHMC is still short by 20-30% to reach 100% enrollment in Math during a student's first year, yet above average when compared to other neighbor island UHCC math programs. Enrolling students during the first year into Math prepares them with the math skills they need to complete assignments in other college courses, so early Math completion is highly recommended.

Demand for Co-Req. courses have been dropping over the past few academic years in response to new placement procedures. For example, in AY 2020-21, around 42% of enrolled students were in the "one level below" or "two level below" Co-Req. courses compared to 14% in AY 2021-2022. This decrease in demand is likely due to more students who traditionally enrolled in developmental and Co-Req. courses choosing to enter directly into the transfer level course, given that there are a wide variety of placement mechanisms that allow students to enroll directly into transfer level math courses. The percentage of students completing college-level Math in each category has remained relatively stable, even in light of the pandemic.

Efficiency By Placement Goals/Student Learning Goals

As you can see below, the student learning goals for students placed at one or two levels below have missed the mark materially but are mostly trending up and are in line with other UHCC math programs. We are continuing to work to support this trend towards our system goals of 70% and 75% completion, detailed in the action plan section. As we continue to be able to bring more "face to face" courses back to campus as the pandemic recedes, we expect better outcomes as students, especially this cohort of students have more opportunities to thrive in such a modality.

Transfer level course (Math 100, 103, 115) completion rates seem to be holding steady, if not improving. It is a challenge to visualize explanatory factors clearly with the extra layer of data noise the pandemic has thrust upon us.

Discuss significant program or unit actions (new certificate(s), stop outs, gain/loss of position(s), results of prior year's action plan, etc.). Include external factors affecting the program or unit.

Unfortunately, the math program has lost two tenured faculty in recent years that have not been replaced. We were poised to fill one of the open positions, but once the pandemic hit all positions were frozen. We are currently in the steps to re-develop this opening to help support our action plan.

2022 Maui Community College ARPD
Program: **Co-Req Math**

College: **University of Hawai'i Maui College**
Program: **Co-Req Math**

ENROLLMENT GOAL: 100% of new students enroll in Math in their first year

Fall Semester	New Students ^{1/}	Enrolled in Any Math	% Enrolled	Did Not Enroll	% Not Enrolled
Fall 2019	334	234	70%	100	30%
Fall 2020	320	222	69%	98	31%
Fall 2021	274	223	81%	51	19%

^{1/} Entering fall as first-time freshmen or first-time at campus transfers, no prior Math courses, classified, degree-seeking only.

EFFICIENCY BY PLACEMENT GOALS:

1. By 2021, 75% of students placed at one level below college-ready standards will complete their college-level Math course within one semester of enrolling in Math.
2. By 2021, 70% of students placed at two or more levels below college-ready standards will complete their college-level Math course within one year of enrolling in Math.

Math Placement	AY 2019-2020			AY 2020-2021			AY 2021-2022		
	Enrolled	Completed ^{2/}	% Completed College Level	Enrolled	Completed ^{2/}	% Completed College Level	Enrolled	Completed ^{2/}	% Completed College Level
College	126	83	66%	135	105	78%	87	58	67%
1-level	51	33	65%	29	15	52%	8	5	63%
2+ levels	163	61	37%	168	68	40%	57	25	44%
No Placement	171	81	47%	135	71	53%	302	161	53%
TOTAL	511	258	50%	467	259	55%	454	249	55%

^{1/} First-time attempters/enrolled in Math; no prior subject history; classified, degree-seeking only.

^{2/} Completed within one semester for College and 1-level, within two semesters for 2+ and no placement levels.

STUDENT LEARNING GOAL: All students meet course student learning outcomes.

Math Course	AY 2019-2020			AY 2020-2021			AY 2021-2022		
	Enrolled	Completed	% Completed	Enrolled	Completed	% Completed	Enrolled	Completed	% Completed
75X	146	94	64%	168	112	67%	160	95	59%
78	0	0	0	16	15	94%	8	8	100%
82	50	30	60%	38	24	63%	26	18	69%
88	27	18	67%	32	28	88%	17	10	59%
100	103	52	50%	100	44	44%	160	85	53%
103	210	138	66%	185	148	80%	134	101	75%
115	422	272	64%	393	284	72%	300	208	69%

3. Program Student Learning Outcomes or Unit/Service Outcomes

- a) List of the Program Student Learning Outcomes or Unit/Service Outcomes
- b) Program or Unit/Service Outcomes that have been assessed in the year of this Annual Review.
- c) Assessment Results
- d) Changes that have been made as a result of the assessment results.

As Co-Req Math is a course, not a program, there are no program level SLO's

4. Action Plan

As Hawaii transitions from a tourism-dependent economy to a more diversified, information-based economy, quantitative skills, problem solving skills, and critical thinking skills addressed in this program will be even more essential. Mathematics is a core pillar in understanding clinical data in healthcare and algorithms in computer science, two of the significant growth areas targeted by our state.

Change MATH 103 + 88/ MATH 115 + 78 to Math 103T/ Math 115T

We have always offered MATH 88/MATH103 as a cohort. When registering, it was confusing to students that they had to pick a particular section of MATH 103 to pair with MATH 88. One semester we experimented with having one instructor for MATH 88 and a different one for MATH 103, which did not go well - Students attended MATH 88 and skipped MATH 103.

By combining the courses into a single course with a single CRN, it is easier for the students to register and to know exactly when their class is scheduled to meet. We also hope it will make advising easier for counselors. The change was first implemented in Fall 2022 and the course had low enrollment. We later discovered that the Placement Guidelines had not been updated to reflect the change from 2 courses to MATH 103T. There has been a downward trend in enrollment for the co-requisite class. We have speculated on causes - higher placement with multiple measures, students and counselors unfamiliar with the course benefits, and on-line classes that no longer have embedded tutors in the classroom. Enrollment in MATH 103 with corequisite remains strong at Oahu campuses. We are not offering the course in Spring 2023. Before registration for Fall 2023, we will ensure that the Placement Guidelines are accurate, and that counseling is aware of the change. We may position MATH 103T in Spring 2024 as the preferred option for students who failed MATH 103 and would benefit from more support.

Embedded Tutors

Embedded tutors are an essential component to all Co-Req. classes, and especially significant in these super classes (Math 103T/115T).

Migration back to “face to face” classrooms is a key strategy in our action plan.

Migrating from Asynchronous or Synchronous Zoom to in class “face to face” instruction. Students, especially Co-Req. students, have more opportunities to thrive in modalities that are “face to face” live classroom settings. “Face to face” instruction is so important because students are able to interact with each other and the instructors are able to see what they are doing in terms of organizing their work and being able to correct misconceptions of ideas.

Replacing lost tenure track positions is another key strategy in our action plan.

Tenured faculty have a closer connection and commitment to our students and college. We feel this will continue to help with not only our migration to program goals, but institutional goals. Currently we are under our institutional goal of 50% budget being instructional costs.

Expand Learning Communities in varying ways is another key strategy in our action plan.

We have begun this work with our movements to offer Math 115/English 100 team ups on FY student cohorts. We have also reached out to support other program in ICS and Bus to attempt to bridge our student pathways and connections with mathematics and other disciplines, and future career tracks. ICS and Bus certificate programs utilize mathematics courses and concepts.

Deepening the understanding of the utility of the concepts our mathematics students master in our course will help with retention and completion.

5. Resource Implications

Embedded Tutors

Embedded tutors are an essential component to all Co-Req. classes and reduce time to degree. They will continue to be essential. To encourage the highest percentage of students to succeed in Co-Req Math, the UHCC system and UHMC administration promised long-term funding for in-classroom tutors in all developmental classes. This aligns with the teaching philosophy behind the course which immerses students in college-level work while providing additional support to help them succeed. We will continue to work with TLC Director Kristine Kory-Smith to train and secure peer tutors for each of our Co-Req. Math classes. The cost of a tutor is roughly \$672 per class.

☐ **I am NOT requesting additional resources for my program/unit.**